

ARREST OF GROWTH AT THE LOWER END OF THE RADIUS AFTER SEPARATION OF ITS EPIPHYSIS.

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MASTER R. B., 11 years of age, sustained a Colles' fracture of the left hand by a fall two years ago. The hand was set and treated without any subsequent deformity or limitation of motion. As the boy grew older, his parents noticed a gradually increasing abduction of the left hand and a projection of the ulna. At the same time there was limitation of motion in some directions. They ascribed the deformity to the fact that the fracture had been improperly set. Upon examination, it was found that the hand was markedly abducted, adduction was absent, though flexion and extension were practically normal, supination and pronation limited. The radius was found to be one inch shorter than the ulna.

The X-ray examination shows two normally shaped bones, but the radius shorter than the ulna (Fig. 1). The epiphysis of the radius is united firmly with the diaphysis in the centre by bony tissue. There being no distinct demarcation as in normal bones between epiphysis and diaphysis. The probable pathology is that, the cartilaginous portion having undergone bony changes, the osteoplastic function of the epiphysis is destroyed; as the result the radius is stunted in its growth, causing deformity. These changes of permanent ossification take place about the twenty-second year, but also can be brought about by irritation of the epiphysis, as has been shown by animal experiments. The latter may be the cause in this case as the result of improper immobilization of the fragments. Fractures of the epiphyses are very frequent in young people, especially in the radius, the latter being the most frequent form of fracture of the human skeleton next to the ribs. The injury is pro-

duced by a cross-strain, the limb having been bent beyond the normal limit or direction where there is no motion.

P. Bruns collected 81 cases of epiphyseal separations, with deformity as the result of retarded growth, the most frequent site being the femur with the radius following. Most cases occurred during the years of ten to nineteen.

Among the 81 cases, there were 25 of retarded growth of the radius.

Stimson, in his large experience, only saw 2 cases.

The treatment of the above case is resection of the ulna in order to restore the functions of the wrist joint and correct the deformity.

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